

[54] **DEVICE FOR SAMPLING FLUIDS AND SLURRIES**[76] Inventor: **Roger R. Nelson**, 4125 E. 6th St., Tucson, Ariz. 85711[22] Filed: **Mar. 18, 1974**[21] Appl. No.: **451,809**

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[58] Field of Search 73/421 B, 422 TC, 446, 73/447; 204/1 T, 295 R

[56] **References Cited****UNITED STATES PATENTS**

2,700,299	1/1955	Fankboner et al.	73/446
3,012,438	12/1961	Pochan et al.	73/447
3,587,670	6/1971	Brailsford	73/421 B

FOREIGN PATENTS OR APPLICATIONS

1,171,180	5/1964	Germany	73/421 B
934,737	8/1963	United Kingdom	73/421 B

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[57] **ABSTRACT**

A device for sampling fluids, mixtures of fluids and solids (slurries), and emulsions comprising sampling tube means immersed in a tank or vat containing the

fluid or mixture to be sampled. The material to be sampled may be in the process of agitation. A sampling tube is capped at one end with means for fluid level indicating probes communicating through said capped end, an air line communicating interiorly through the capped end, means for ion sensing electrodes extending through the capped end in communication with the fluid in the sampling tube, means for withdrawing samples, and means for rinsing the sampling tube interior and ion sensing electrodes. Additional control means are provided exteriorly to the sampling tube for orderly sequencing of the sampling process. The slurry is permitted to rise at a controlled rate in the sampling tube by means of atmospheric pressure or by withdrawing air from the sampling tube, the level sensing probes provide information as to the level of the fluids in the sampling tube, the ion sensing electrodes are utilized, samples are withdrawn by vacuum means from the sampling tube to a secondary sampling container for recovery, analysis, and/or storage.

After the sampling procedure has been accomplished on the sample in the sampling tube, air means eject the fluid out the lower end of the sampling tube, the ejection being sensed by the level probes and means provided for the washing of the probes, the electrodes and the sample withdrawal means. The cycle may then be repeated at desired intervals.

11 Claims, 2 Drawing Figures